WHAT IS CLAIMED IS

1. A laser distance measuring apparatus for measuring the distance between objects existing in two directions at least as seen from the apparatus by using laser light, comprising:

at least two projectors for projecting laser beams along a specified projection axis toward each one of the objects,

a photo detector for receiving reflected light of projection from each object,

a distance measurement processor which measures the distance from reference point of the apparatus to each object on the basis of the reception signal by the photo detector, and

a distance calculation processor which calculates the distance between the objects on the basis of the distance data measured by the distance measurement processor and the angle formed by at least two projection axes,

wherein the projection axis by one projector is variable in angle with respect to the other one.

2. The laser distance measuring apparatus of claim 1, wherein the projectors and photo detector compose a detector, and plural sets of detectors are provided, and

plural distance measurement processors are provided corresponding to the plural sets of detectors, and are capable of measuring the distance in plural directions by one distance measuring operation.

3. The laser distance measuring apparatus of claim 1, wherein the projector has one light source, and the light beam from one light source is

separated in two directions and emitted toward two objects.

4. The laser distance measuring apparatus of claim 1, wherein the projector has semiconductor laser of both-side emission for projecting light beams in two directions.

5. The laser distance measuring apparatus of claim 1, wherein the photo detector has one sensor for detecting reflected lights from plural objects sequentially by way of plural optical fibers.

6. The laser distance measuring apparatus of claim 1, further comprising a beam splitter capable of changing over freely between a state positioned on the optical path of the reflected light and a state dislocated from the optical path, wherein reflected lights from plural objects are received by changing over sequentially by a single photo detector.

7. The laser distance measuring apparatus of claim 1, wherein the distance measurement processor is only one, and measures each distance to plural objects sequentially by changing over signal reception from the plural photo detectors.

8. The laser distance measuring apparatus of claim 1, wherein a half-mirror is disposed on the optical path of the reflected light, and reflected lights from plural objects can be received by one photo detector by means of the half-mirror.

9. The laser distance measuring apparatus of claim 1, wherein the detector including the projector and photo detector is provided in two independent pieces, each being provided rotatably about the axis for varying arbitrarily the angle formed by the projection axis of the light beam,

including an angle detector for detecting the angle formed by the projection axes, and

the angle data obtained by the angle detector is used as the angle formed by two projection axes for calculation of distance by the distance calculation processor.

10. The laser distance measuring apparatus of claim 9, wherein the angle detector comprises a protractor for measuring the angle of the two detectors, and an input device for entering the angle value read from the protractor into the distance calculation processor.

11. The laser distance measuring apparatus of claim 9, wherein the projection axis of at least one light beam when the two detectors are opened is in a parallel configuration to the installation plane of at least one detector.

12. The laser distance measuring apparatus of claim 11, further comprising a level vial for detecting that the installation plane of at least one detector is horizontal.

13. The laser distance measuring apparatus of claim 9, wherein the distance calculation processor has a function of storing the combined data of the rotational angle as the angle formed by light beams of the two detectors and the distance measured at this angle.

14. The laser distance measuring apparatus of claim 12, further comprising a mechanism for adjusting so that at least one detector may be maintained horizontal on the basis of the horizontal level detection result by the level vial.

15. The laser distance measuring apparatus of claim 13, further

comprising a function of storing the combined data in an external storage medium.

16. The laser distance measuring apparatus of claim 13, further comprising a function of communicating the combined data with an external information appliance.